

**REMARKS**

This Amendment is filed in response to the Office Action dated June 13, 2008. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this Amendment. The amendment to claim 1 is supported throughout the specification, including Fig. 1.

Claims 1-8 are pending in this application. Claims 1-8 have been rejected. Claim 1 has been amended in this response.

***Claim Rejections Under 35 U.S.C. § 103***

Claims 1 – 8 were rejected under 35 U.S.C. § 103 (a) as unpatentable over Miyazaki et al. (US 6,423,446) in view of Yasui et al. (JP 2001-179151) and further in view of Watanabe et al. (JP 08-229481) or Yasuaki et al. (JP 11-317218).

This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the present invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a method for producing lithium ion secondary batteries, comprising the steps of preparing an electrode sheet with lead-forming parts and intermittently forming porous insulating layers comprising an inorganic oxide filler and a binder on a surface of the electrode sheet excluding the lead-forming parts. A lead is connected to each of the lead-forming parts and the batteries are fabricated by using the electrode sheet to which the leads are connected. The step of intermittently forming porous insulating layers comprises a step of applying a slurry comprising the inorganic oxide filler and the binder to the outer surface of a gravure roll, and transferring the slurry applied to the outer surface of the gravure roll onto a surface of the electrode sheet that is being transported by a plurality of guide rolls, excluding the

lead-forming parts; and a step of moving at least one selected from the gravure roll and the guide rolls to move the electrode sheet away from the gravure roll at the lead-forming parts. The gravure roll is disposed between said plurality of guide rolls.

The combination of Miyazaki et al., Yasui et al., Watanabe et al., and Yasuaki et al. does not suggest the claimed method for producing lithium ion secondary batteries because Miyazaki et al., Yasui et al., Watanabe et al., and Yasuaki et al., whether taken alone, or in combination, do not suggest intermittently forming porous insulating layers comprising an inorganic oxide filler and a binder on the surface of an electrode sheet by applying a slurry comprising the inorganic oxide filler and the binder to the outer surface of a gravure roll, and transferring the slurry applied to the outer surface of the electrode sheet, and moving at least one selected from the gravure roll and the guide rolls to move the electrode sheet away from the gravure roll at the lead-forming part, wherein the gravure roll is disposed between the plurality of guide rolls, as required by claim 1.

Contrary to the Examiner's assertion, Miyazaki et al. do not disclose intermittently forming porous **insulating** layers comprising an inorganic oxide filler and a binder on the surface of an electrode sheet by applying a slurry comprising the inorganic oxide filler and the binder to the outer surface of a gravure roll, and transferring the slurry applied to the outer surface of the electrode sheet, as required by claim 1. Miyazaki et al. disclose applying a slurry of an inorganic oxide **active** material and a binder on a collector. The inorganic oxide **active** material and binder would not be an insulating layer. Rather, in order for the battery to function, the **active layer must be conductive**.

Contrary to the Examiner's characterization of paragraphs [0036] – [0040] of Yasui et al. as teaching moving at least one of the gravure and guide rolls away from the sheet at a lead

forming part, the cited paragraphs, as well as the entire disclosure of Yasui et al., fail to suggest movement of at least one of the gravure and guide rolls away from the sheet at a lead forming part as recited in claim 1.

Applicants again request that the Examiner specifically point out where Miyazaki et al. disclose intermittently forming porous **insulating** layers comprising an inorganic oxide filler and a binder on the surface of an electrode sheet by applying a slurry comprising the inorganic oxide filler and the binder to the outer surface of a gravure roll, and transferring the slurry applied to the outer surface of the electrode sheet, and where Yasui et al. disclose **moving** at least one of the gravure and guide rolls **away from the sheet at a lead forming part**. Though, the Examiner alleged that paragraphs [0036] – [0040] of Yasui et al. teach moving at least one of the gravure and guide rolls away from the sheet at a lead forming part, it is not apparent where Yasui et al. makes such a disclosure. It is respectfully requested that the Examiner point out the specific text in paragraphs [0036]-[0040] that the Examiner is relying on for this teaching. It is respectfully submitted that the Examiner's apparent refusal to address Applicants' traversal is insufficient to meet the requirements under MPEP 707.07(f), where the Examiner is required to answer and address all traversals. This requirement is **in addition** to *any repetition of a previously held position* and is required to provide the Applicants a chance to review the Examiner's position as to these arguments and to clarify the record for appeal. Such action by the Examiner constitutes arbitrary agency action and violates Applicants' right to procedural due process of law by failing to appropriately apprise Applicants why patentability is denied to the claimed invention. *In re Mullin*, 481 F.2d 1333, 179 USPQ 97 (CCPA 1973).

Additionally and as further noted in MPEP 707.07(f), a failure of the Examiner to address the Applicants' traversals can be deemed a failure to rebut these arguments so as to admit that

the arguments have overcome the rejection. At the very least, the failure to address the Applicants' traversals would render the Examiner's decision to again reject the claims arbitrary and capricious and invalid under the Administrative Procedures Act, 5 U.S.C. § 706, the standard under which such rejections are reviewed in view of *Dickinson v. Zurko*, 527 U.S. 150, 50 USPQ2d 1930 (1999).

As taught by Yasui et al. (paragraphs [0013] and [0032-0034]), the upper unit 30 is moved so that base material 10, which is extended between a pair of attitude control rolls 12, comes into contact with and separates from the upper surface of the gravure roll 13. The gravure roll 13 can be vertically moved (paragraph [0016]). At the start of applying the coating agent to base material 10, the gravure roll 13, is moved downward until a proper amount of coating agent is supplied to gravure pattern 17. After the coating agent is supplied, the gravure roll 13 is moved upward so as to come into contact with the base material 10. Therefore, Yasui et al. moves the pair of attitude control rolls 12 and the gravure roll only at the start and end of the process of applying the coating agent to base material 10.

Watanabe et al. disclose a device for intermittently applying a coating agent. The device comprises a roll and a coating agent spraying nozzle facing the peripheral surface of the roll. A base material is carried onto the peripheral surface of the roll, and a coating agent is intermittently applied onto the outer surface of the base material from the coating agent spray nozzle. Watanabe et al. do not teach applying a coating agent onto the outer surface of the base material by means of bringing a roll carrying a coating agent on its peripheral surface into contact with a base material. The intermittent application of Watanabe et al. is performed by generating pressure in the coating agent spray nozzle. The pressure becomes a negative pressure against the coating agent spraying direction, and thereby suppresses the coating agent spraying.

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Watanabe et al. do not disclose a step of moving at least one selected from the gravure roll and the guide rolls to move the electrode sheet away from the gravure roll at the lead-forming parts, wherein the gravure roll is disposed between said plurality of guide rolls, as required by claim 1.

In Yasuaki et al. a base material is an electrode core member having a smooth surface before forming an electrode material mixture layer. The application roll 22 of Yasuaki et al. appears to be a smooth roll. Further, application roll 22 and back-up roll 23 are disposed adjacent to each other. Furthermore, in the space between application roll 22 and back-up roll 23, an electrode material mixture is applied onto sheet 28. Sheet 28 is an electrode core member having a smooth surface. The application roll 22 and back-up roll 23 are always disposed apart from each other so that a uniform application of an electrode mixture is applied to the base material. Yasuaki et al. do not disclose a step of moving at least one selected from the gravure roll and the guide rolls to move the electrode sheet away from the gravure roll at the lead-forming parts, wherein the gravure roll is disposed between said plurality of guide rolls, as required by claim 1.

In the present invention, the gravure roll and guide rolls are configured such that the electrode sheet does not come into contact with the guide rolls at the position where the electrode sheet contacts the gravure roll. Such a positional relationship maintains a fixed dynamic balance among the respective members. Thus, in the present invention, an electrode material mixture can be applied onto an electrode sheet having microscopic asperities formed at a fixed interval on the surface, with the thickness being uniform regardless of asperities. The present invention enables a porous insulating layer having uniform thickness formed on the surface of the electrode sheet. Batteries using electrodes formed according to the present invention prevent the occurrence of

short circuits and the expansion of short circuits, provide uniform charge and discharge, and have a high cycle capacity retention rate.

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). There is no suggestion in either Miyazaki et al., Yasui et al., Watanabe et al., or Yasuaki et al. to intermittently form porous insulating layers comprising an inorganic oxide filler and a binder on the surface of an electrode sheet by applying a slurry comprising the inorganic oxide filler and the binder to the outer surface of a gravure roll, and transferring the slurry applied to the outer surface of the electrode sheet, and moving at least one selected from the gravure roll and the guide rolls to move the electrode sheet away from the gravure roll at the lead-forming part, wherein the gravure roll is disposed between the plurality of guide rolls, as required by claim 1.

The only teaching of the claimed method is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The dependent claims are allowable for at least the same reasons as independent claim 1 and further distinguish the claimed method for producing lithium ion secondary batteries.

In view of the above remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the

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application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

A handwritten signature in black ink, appearing to read "Bernard P. Codd".

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